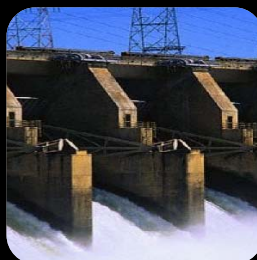
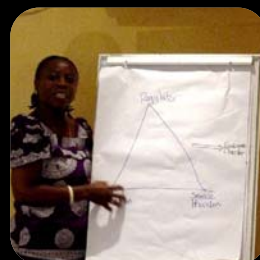


FINAL REPORT

# Energy and Environment Training Program

INDEFINITE QUANTITY CONTRACT (IQC)  
1998 – 2004



The United States Agency for International Development

Contracts    LAG-I-00-98-00010-00  
                  LAG-I-00-98-00011-00  
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*June 2004*



# **Energy & Environmental Training Program**

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**Final Report**

**June 2004**



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## LIST OF ACRONYMS

|        |   |
|--------|---|
| ADB    | Asian Development Bank                              |
| AED    | Academy for Educational Development                 |
| AFUR   | African Forum for Utility Regulators                |
| ANEEL  | National Agency for Electrical Energy (Brazil)      |
| APDRP  | Accelerated Power Development and Reforms Programme |
| BPDB   | Bangladesh Power Development Board                  |
| CO     | Contracting Officer                                 |
| CORE   | CORE International, Inc.                            |
| CTO    | Cognizant Technical Officer                         |
| DFID   | Department for International Development            |
| DOE    | Department of Energy                                |
| DRUM   | Distribution Reform, Upgrades and Management        |
| DSM    | Demand-Side Management                              |
| EETP   | Energy and Environmental Training Program           |
| EIA    | Environmental Impact Assessment                     |
| EIT    | Office of Energy and Information Technology         |
| ERB    | Energy Regulatory Board                             |
| ESCO   | Energy Services Company                             |
| GHG    | Greenhouse Gases                                    |
| GOI    | Government of India                                 |
| GVEP   | Global Village Energy Partnership                   |
| HEPs   | Higher Education Partnerships for Sustainability    |
| IAP2   | International Association of Public Participation   |
| IDB    | Inter-American Development Bank                     |
| IIE    | Institute of International Education                |
| IPP    | Independent Power Pool                              |
| IQC    | Indefinite Quantity Contract                        |
| IT     | Information Technology                              |
| NGO    | Non-Governmental Organization                       |
| RE     | Rural Electrification                               |
| RES    | Rural Energy Services                               |
| SADC   | Southern African Development Community              |
| SAREC  | South Asia Regional Energy Coalition                |
| SARI/E | South Asia Regional Initiative/Energy               |
| SDB    | Small Disadvantaged Business                        |
| SEBs   | State Electricity Boards                            |
| SMEs   | Small and Medium Enterprise                         |
| STEM   | Short-Term Electricity Market                       |
| TAG    | Technical Advisory Group                            |
| TDY    | Temporary Duty                                      |
| TNA    | Training Needs Assessment                           |
| TOT    | Training-of-Trainers                                |
| UNDP   | United Nations Development Program                  |
| UNEP   | United Nations Environment Program                  |
| USAID  | United States Agency for International Development  |
| WRI    | World Resources Institute                           |



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## INTRODUCTION

Two billion people lack access to modern energy, and simple privatization and technology transfer schemes have failed to address this problem in a sustainable manner.

However, development is a people business rather than a technology deployment business, and energy & development objectives can be fulfilled when people and institutions are knowledgeable and skilled in operating the economic, political, and social structures through which energy technology can be installed.

This Final Report illustrates how training and institutional capacity-building are critical for people in developing countries to gain access to modern energy, to utilize energy regulation as a basis for good governance country-wide, and to increase public understanding of changes in the energy sector so they may participate at appropriate levels in energy sector decision-making.

This Final Report of the Energy and Environmental Training Program (EETP) IQC was prepared by the Academy of Educational Development (AED) in collaboration with CORE International, Inc. and the Institute of International Education (IIE) for the Energy Team of USAID's Office of Energy and Information Technology, and highlights our collective work in helping nearly 17,000 developing country energy professionals increase their own capacity to improve the energy sector foundation for economic, political, and social development in their respective countries over the past six years.

In the mid-1980s, USAID led a strategic reassessment of the energy problem in developing countries which concluded that the dominant problem in most countries at that time was meeting growing demands for electricity when governments had a very limited capacity to borrow funds in order to add electricity generating capacity. According to the study, the major directions for solving this problem were to: (1) increase electricity system efficiency in order to deliver more services per unit of electricity generated (which would also offer environmental benefits), and (2) greatly expand the role of private power generation, in which private-sector firms provide the financing for new facilities that they build and either operate or transfer.

Consequently, USAID helped shift the development paradigm away from simply increasing market penetration of energy technologies, and towards sector restructuring and privatization of state-owned energy enterprises. Developing country governments responded by turning to international markets and to the private sector for needed investment capital and development experience.

Increased privatization of the energy sector has the potential to free up scarce government funds for social investment. Yet the basic conditions necessary to attract private capital, such as adequate legal and regulatory regimes, and independent and transparent policy and regulatory structures are not yet in place in many countries. Additionally, the human and institutional capacity to undertake restructuring in a systematic manner, to manage the sector

in a restructured environment, and to work effectively with private investors, has been inadequate.

Now there is a realization that simple privatization of government-owned utilities is insufficient. The sustainable delivery of energy services, in both urban and rural areas, requires the recognition that energy is not just a public good but also an economic commodity that is subject to the supply and demand rules of the marketplace.

Programmatically, this entails a shift in focus toward creating stable marketplaces in developing countries; building legal and regulatory regimes capable of guaranteeing transparency, consistency, and accountability in the financing and operations of developing country energy sectors; and bringing rural areas into the mainstream of national economic and political life through coordinated development and outreach strategies.

Now the critical matter before the development community is less a matter of technological inadequacy, than it is a need for people and institutions to create the public policy and economic systems that enable developing countries to efficiently and effectively employ energy technologies that are available in the marketplace. Training and institutional capacity building enable people to develop the institutions that ensure access of people to energy, generate agreement on principles for energy sector restructuring among a broader group of stakeholders, and establish principled processes through which stakeholders can interact and mediate their interests.

The Energy and Environmental Training Program IQC was instrumental in bringing USAID's thinking to this point, and this report illustrates the work that was accomplished along the way.

## ENERGY AND DEVELOPMENT

Energy is fundamental to daily life. Whether it is providing lights for our classrooms, refrigeration for our food and medicine, pumps to irrigate our crops, or electricity to run our commercial and industrial enterprises, energy provides the means for economic growth and social and political development.

The current state of global economic and social impoverishment is reflected in the levels of energy poverty we witness around the globe. Today, one out of every three people in the world lacks access to modern energy services. Furthermore, the number of people without modern energy continues to grow year after year. For the most part, families throughout the developing world continue to rely on traditional fuel sources such as firewood, charcoal and dung, the use of which has severe health, environmental and social effects.

Because energy is inherently connected to each of USAID's development goals, the Agency works to illuminate those linkages that exist between energy and poverty alleviation, improved health and education services, gender and inter-generational equity and social justice. USAID programs around the world integrate energy issues into the broader complex of development programs. In addition, USAID is at the forefront of the U.S. Government's effort to increase access to clean, efficient and healthy forms of energy through the U.S. Government Clean Energy Initiative, announced at the 2002 World Summit on Sustainable Development.

USAID focuses its efforts on a constellation of themes universally acknowledged as being of primary importance. Three themes highlighted in this section are: Access to Modern Energy, Public Participation in the Energy Sector, and Regulation as a Basis for Good Governance.

## ACCESS TO MODERN ENERGY

- BY CORE INTERNATIONAL, INC.

Virtually every indicator of social, economic or political well-being presupposes access to modern and reliable energy. Who has not seen the children in developing countries doing their homework under streetlights because their homes lacked access to a reliable and affordable source of electricity? Normal activities that we take for granted here in the US - that goods can get to market, that people can receive vaccinations, that water can be treated and distributed to homes, farms and industries - all require effective and efficient provision of various forms of energy.

While it is true that the mere provision of plentiful energy does not guarantee development, it is virtually certain that significant economic and social progress is unimaginable without the necessary energy supplies. This asymmetry in the role of energy in the economy and society affects many aspects of the nexus of energy and society. For example, the supply of pumped water to farmers will not transform them into highly efficient producers of basic or export-oriented crops, but it is hard to imagine significant progress in food production without greater use of energy.

Similarly, making sure that energy is not a net burden on the economy does not guarantee that investments in other sectors will flourish, but it is hard to see where the funds for such investments can come from if much of the government's monies are allocated to energy subsidies. Modernizing the commercial and industrial sectors and societal development are not guaranteed by high quality electricity supply, but modern machinery and computers cannot function without it.

Most countries realize the role that energy can play in their development and accordingly, energy often represents the government's largest single investment in infrastructure. Because this investment is costly and because energy supply often involves both foreign indebtedness and continuing supplies of imported materials, energy supply remains an area that deeply affects the financial health of a country as well as its ability to achieve sustainable growth. At the level of society and individuals, energy availability or lack thereof directly impacts social development and quality of life.

The key energy challenges facing developing country governments encompass all of the items noted above as well as many more energy-economy-society interactions. Two key elements of the energy-economy nexus concern rural development and community well-being directly. These are (i) rural energy service (RES) delivery and (ii) mechanization of agriculture. The provision of additional energy supplies to rural areas, in turn, creates the potential for improved educational opportunities, better health care and outreach, and new income generating opportunities in rural areas, all essential for Societal development and improvement in the quality of life of the rural poor.

Important criteria for assessing the challenges facing new rural energy (RE) development include the following:

**Sustainability** – development does not simply shift burdens to others in society or to the natural environment.

**Directly perceivable and tangible benefits for rural areas** – energy initiatives lead to improvements in education and health services, new opportunities in the industrial and agricultural sectors, better rural-urban integration, increased trade, improved infrastructure, and an overall rural development and better quality of life.

**Financial and Economic viability** – energy development is part of an overall program to make sure that funds are adequate to provide for the expansion and operation of new energy initiatives and the measurable benefits exceed the measurable costs.

**Support for programs by the beneficiaries** – people welcome the energy development initiatives and are willing to assist in the successful implementation of these initiatives.

### **Modern Energy Services for Poverty Alleviation - The Rural Nexus of Energy and Development**

Increased access to energy in rural areas will result in greater economic activity, leading to higher household incomes and a better quality of life. USAID has an important role as a catalyst and sponsor of the translation of improved energy services into higher household incomes. USAID works with local communities, national policymakers, and the broader stakeholder community to ensure that improved energy services are (i) targeted to productive ends, (ii) implemented efficiently through transparent and accountable means, (iii) linked to specific improvements in social services, and (iv) affordable by the intended beneficiaries.

#### **Productive Activities**

Modern energy services enable the following types of improved productive activities:

- ❖ Cottage industries in rural areas using lighting and small machinery in order to increase disposable income;
- ❖ Better use of water in agriculture, permitting new types of crops and even a third cropping cycle thereby increasing both power and water use efficiency and overall crop production; and
- ❖ Introduction of IT and telecommunications technology, permitting direct communication between buyers and sellers, thereby improving productivity, commerce, and trade. Experience in many countries has indicated that improved communications has been one of the primary benefits of USAID activities. In Egypt, for example, the USAID assistance has led to higher incomes in agricultural areas, as growers using irrigation water and modern communications, both powered by new electricity initiatives, are better able to communicate directly with their customers.

### **Efficient and Transparent Energy Service Delivery Implementation**

One of the most complex problems with the use of modern energy systems is that they tend to be more expensive than traditional, if inferior alternatives. Where supply is inefficient, and therefore costly, USAID has launched targeted programs that have assisted countries in instituting reforms that reduce the cost of supply, make energy more sustainable, and increase the number of people with access to modern energy.

For example, in Indonesia, USAID played a critical role in socializing the restructuring of the country's important oil sector, thereby reducing the financial and economic drain of energy subsidies. This program, implemented in the context of overall assistance to a democratic transformation of the country, has proved to be a significant success.

### **Improvements in Social Services**

Use of electricity is becoming a critical input to social services such as health and education. Essential improvements in public health involve better water supply, vaccinations, and displacement of indoor air pollution through the use of electricity and other modern fuels. The decline in water-borne diseases in East Asia is generally attributable to improved treatment as well as vaccination against certain common water-borne diseases. Reliable electricity, especially at night, greatly improves educational opportunities for classrooms, studying at home and even computers.

### **Affordability**

Connected with the increased efficiency and transparency in energy service delivery is an improvement in affordability. Once higher levels of household energy use can be tied to improved incomes, the energy use becomes more affordable. Indeed, once the link to improved health and well-being is apparent, the willingness-to-pay for commercial energy supplies, and hence, the perceived affordability of that consumption, may well improve.

## **Rural Electrification as a Means of Improving Energy Supplies**

In a number of USAID countries, rural electrification programs have proved to be one of the backbones of sustainable development. The benefits of electricity used for productive activities and rural services are obvious. However, the key problem with the traditional uni-sector orientation of rural electrification has been that it is too costly. This needs to be overcome through multi-sectoral approaches to designing and delivering rural energy services by explicitly linking energy to social services and income generating activities.

Simply put, electrification of rural areas combines high cost of service with low purchasing power, a deadly commercial mix. USAID and others have worked hard to come up with creative alternatives to unaffordable and, therefore, unsustainable energy systems. The lessons from USAID's experiences around the world are worth summarizing.

### **Adopt a Broader View of Rural Electrification**

Rural electrification should be viewed in terms of its criticality to rural development -- better education; modern health care; agriculture sector development; creation of rural industry; employment; income; retention of qualified students and workers through providing some of the amenities that urban life makes possible. The new trend in development assistance is

to explicitly link financing for rural electrification programs to the countries' Poverty Reduction Strategy Papers (PRSP) which embodies the nexus of rural energy with rural development.

### **Develop RE Policies and Programs at the Local Level**

Rural energy programs and policies solely designed at the national level without the active involvement of rural consumers, village and municipality officials and elected leaders, village farmers, and other industry leaders have not resulted in measurable success and sustainability. Local Consumer participation and empowerment have emerged as critical needs and form the essential components of effective institutional and business models for efficient and reliable rural energy service delivery.

### **Develop Creative Approaches to RE Program Implementation**

In order to draw upon private sector efficiency and achieve transparency, the government ministries should consider involving private energy service providers, development banks, local commercial banks, and local and internationally known and experienced NGOs in the implementation of the programs.

### **Focus Government Resources on Acting as a Broker not an Implementer of RE Programs**

Governments should consider revising their roles from the owners of RE programs to brokers, bringing the energy companies, local and international banks, energy equipment and technology providers, donors, and consumer groups into the project in order to facilitate development and implement market-driven solutions to rural energy needs. This can be achieved only after the government puts in place an enabling environment that would encourage private sector investment in RE programs. USAID has been active in providing assistance to many countries. Nepal, Sri Lanka, Bangladesh, Lesotho, and Zambia are just a few of the examples where USAID is assisting the governments in designing new and effective institutional and financial models for rural energy service delivery.

### **Design and Implement Targeted Research and Development, Training and Information/Communications Programs**

A proper function for government's policy and role in RE is to devote its resources to assessing RE technologies for its rural sector. The government can prioritize the applicable technologies in terms of their costs and benefits and devise incentives to influence consumer choices and market behavior. Experience in many countries has confirmed repeatedly that properly designed programs in these areas can be very effective in technology acceptance, consumer participation, and market entry.

### **Capitalize on Good Corporate Citizenship to Facilitate RE**

A somewhat unorthodox approach used by some governments (Thailand, the Philippines) is to capitalize on good corporate citizenship of large foreign companies interested in making investments in their countries by negotiating some value added to other, non-energy projects with the inclusion of a rural electrification component.



## **The Role of GVEP- A Presidential Initiative**

GVEP, the Global Village Energy Partnership, is an example of new thinking in rural electrification. This US Presidential Initiative – being implemented by USAID in collaboration with other donors– has been embraced by major international development agencies and donors including the World Bank, UNDP, DFID, among others. It is driven by the motto that “people themselves need to get their development fates in their own hands” while all other stakeholders in a position to help should provide developmental assistance that promotes long-term sustainability.

In implementing this approach, it is important to define the best way of sustainable mobilization of local populations’ interest and resources. And, a buy-in process needs to happen prior to achieving it. Due to the particular nature and role of energy in the development process, a large number of stakeholders have to get involved in its development. The approach USAID is implementing is a bottom up, all-inclusive, and results-oriented approach that emphasizes public participation and consumer empowerment in all aspects of rural energy and rural development nexus. This approach is picking up momentum in many countries assisted by USAID including Zambia, Sri Lanka, Ghana, and others. Under the GVEP initiative, USAID (through its institutional contractors) is promoting a four-step process that involves many of the measures discussed above. Specifically, these include the following:

- ❖ Solicit local, regional, and international partners in the GVEP spirit;
- ❖ Design and develop policies, regulations, institutions, and finance market-oriented mechanisms that will allow for the implementation of large programs;
- ❖ Influence governments to make GVEP implementation steps an integral component of their national development plans and the Poverty Reduction Strategy Papers (PRSPs); and
- ❖ Design and develop results-oriented action plans based on extensive stakeholder participation and commitment for implementation

## **Conclusions and Recommendations for the Way Forward**

Improved energy supplies for rural areas are unquestionably a critical element in national and local development. At the same time, implementation remains slow, costly and taxes national resources disproportionately to the tangible benefits. USAID’s experience around the world points the way to innovative programs and policies. These include the following key elements:

- ❖ Mobilize key national and local institutions and assist them to become true stakeholders in the development and implementation of rural energy strategy;

- ❖ Give implementation of sustainable rural energy strategies a higher priority in government decision-making by integrating it with overall rural economic development and poverty alleviation;
- ❖ Design rural energy service models that integrate other sectoral priorities and programs and are consistent with the countries' Poverty Reduction Strategy paper, a policy paper required of all countries that receive donor support from the World Bank and the International Monetary Fund;
- ❖ Create a policy and regulatory environment that would encourage private sector participation in rural service delivery including the delivery of energy services;
- ❖ Decentralize planning, design and implementation of rural energy programs to the lowest unit that is capable of participation. This "devolution" of power should be a guiding principle of rural energy programs in the future; and
- ❖ Involve the public, as consumers, suppliers, entrepreneurs and even as voters, in the delivery of rural energy services.

The overriding theme combining these key elements is "Consumer Participation and Empowerment through a Bottom-Up Approach" to rural energy service delivery to cause rural development and poverty alleviation.

## **PUBLIC PARTICIPATION IN THE ENERGY SECTOR**

- BY THE ACADEMY FOR EDUCATIONAL DEVELOPMENT

Public understanding and participation are central to effective energy policy development and implementation. Yet governments and other energy sector decision makers in developing and several developed countries often ignore this fact, either from a lack of understanding themselves as to the benefits or necessity of such an approach, or from an unwillingness to cede control over policy formulation. Today, governments are realizing that engineering and finance are not the only skill sets needed to develop and implement effective change in the energy sector – change that will help create competitive markets, attract foreign investment, and provide an environment in which newly privatized enterprises can become financially viable. It is no longer a matter of whether to involve the public, but how.

### **Public Understanding**

People are most aware of energy when it is missing – indeed, nothing gets the public involved in energy matters like a power outage. Yet most people do not understand how energy is made and delivered, what goes into determining prices, and why interruptions to service occur (blackouts and brownouts). The first step in engaging stakeholders and individuals in energy policy is therefore to increase public understanding of how the industry or sector operates, how it is regulated or governed, and what the basis is for decisions regarding tariffs, electrification, new power plants and other matters important to communities and stakeholders. Failure to do so has generated a significant amount of mistrust and disinformation concerning the energy sector in many world communities.

### **Social Marketing**

In many countries, energy has historically been seen as a public good that is supplied by government. As governments come to realize they can no longer afford to fully provide services once considered as entitlements (health care, education and energy, for example) they are transforming the public perceptions of these services from "entitlements to commodities." As long as people expect free energy they expect an entitlement; but when they perceive energy as a commodity they pay for, they become partners in the process of energy efficiency and equity. One of the most powerful and successful tools in this transformation has been the use of social marketing to promote widespread public participation in the process of change. Initially seen as a simple problem of "advertising and sloganeering," public officials have come to see that true marketing means listening to people to create new services for which different sectors of the populations are willing to pay. Social marketing uses the same tools used to develop traditional marketing campaigns (market research, message testing, etc.) to address a social issue. Through outreach, education, and communication to stakeholders at all levels, social marketing can promote positive public participation and move consumers from seeing electricity as a personal entitlement to seeing it as a commodity like any other. For example, North Delhi Power, Ltd., in India has developed a marketing campaign to reach women in slum areas. The program educates women about electrical safety issues at the same time it encourages them to apply for formal connections. The program has been successful in increasing the number

of formal electrical connections in the areas where it runs. During its first two weeks of operation, 67 consumers signed up for formal connections and 98 overall expressed interest in doing so.

### **The Public Participation Spectrum**

Public participation implies more than education or understanding: it implies engagement and two-way communication. Learning takes place, but there is also input and feedback into the decision-making process. The Public Participation Spectrum (Figure 1) is one useful conceptual tool that was developed in 1998 by several senior practitioners from the International Association for Public Participation (IAP2) to help explain that not all public participation processes are the same. Different levels have different stakeholders, take place in different areas, apply different consultation tools and techniques, apply them in a different order and are conducted in different languages by different people. Some take a long time (years in extreme cases) and are very costly, while others take barely two or three months and are inexpensive. Applying the appropriate type of participation process to the particular challenge at hand is important for a participation exercise to be meaningful and successful.

The Spectrum was designed to clearly portray that it is the opportunity to influence a decision that helps to frame the appropriate type of participation, not the number of participants, the level of controversy, the complexity of the issue, or any of the other factors that are often used to distinguish among types of public participation. While IAP2 calls its model a Spectrum, this illustration should not be used to imply that there are stages of participation, where one advances from left to right or one to the next, or that the goal is to achieve the highest level of participation possible – full empowerment.

Different levels of participation are appropriate to different situations. While it is important to offer the public opportunities to become engaged in a process, it is equally important to avoid building expectations for higher levels of participation in decision-making processes than are appropriate or feasible. One example of how utilities have involved consumers is in the design of key accounts programs, programs designed to work with the utility's most important customers, usually the large commercial, institutional, and industrial customers. Before the utility can design a program to meet these customers' needs, they need to hear from the customers' what they need and want to see from the utility. The most successful of these programs are designed in concert with the target customers, so that the final program reflects their input.

**Figure 1: IAP2 Public Participation Spectrum™**

## Assessing and Monitoring Public Participation

An important part of considering what level of participation to introduce is to assess the formal and informal opportunities for participation in a society or community. Once processes are implemented, one should also monitor the extent to which techniques are working as intended in practice. USAID is funding World Resources Institute (WRI) to develop a set of indicators and assessment procedures for considering public participation in the electricity sector. Building on WRI's Access Initiative which promotes access to information, participation and justice in environmental decision-making, the toolkit will offer a set of critical questions about key institutional actors and key decision-making processes in the electricity sector. It will help to assess the level and quality of various features of a participatory environment, including transparency, accountability and government and civil society capacity for implementing principals of good governance. The initiative is a response to rising social conflict around power sector development issues -- including power plant sitings, power purchase agreements and tariff setting – and alarmingly high levels of social conflict and poor governance that tend to undercut the investment climate. The toolkit will help to:

- ❖ Establish a benchmark of best practice that can be used to assess reform proposals, operation of the sector, and delivery/maintenance of development benefits
- ❖ Promote accountability across institutions such as legislative bodies, executive powers, regulators, industry associations and utilities
- ❖ Build civil society's capacity to understand technically complex information, exercise its voice strategically and move upstream from project advocacy to engage public sector decision-makers constructively
- ❖ Build government capacity to assess its own performance, and to integrate energy and development objectives

All of these steps are a necessary part of energy sector reform that help create opportunities for increasing public engagement, thereby providing a sustainable platform upon which positive changes can take place.

## Participation Issues in Energy Sector Reform and Privatization

### Communicating about Distribution Reform and Customer Service

In the modern world, people expect the governments to create an environment where basic services are delivered. When this is not the case, people are understandable become angry and their trust in the government erodes because we become depend on electricity for our basic needs and business activities. Utilities and regulators need to provide stakeholders with a better understanding of how the sector works, admissions of what is not working well, and targeted information about sector reform and its implications for each affected stakeholder group. Change is inevitable, but if the reasons and implications of change are not communicated effectively, others will fill the communications void with sensational and often incorrect information. To prevent the spread of inaccurate information, it is important to understand what, how much and the level of technical information each different group

needs, what are their fears and concerns about reform, and to provide opportunities for them to express these concerns. And finally, stakeholders need to have avenues for involvement in addressing those concerns – such as being given choices where feasible, and being able to engage in managing change. Public participation techniques are essential both for communicating effectively and for engaging groups before, during and after reform takes place.

### **Introducing the Role of the Regulator**

The regulatory function has the potential to be the primary vehicle for consumer engagement in the power sector, if all parties understand how to participate in the process. Establishment of a regulatory function is a necessary step in creating a fair market environment in which energy supplies and services can be improved. Public participation in the development and introduction of the regulatory function is important in establishing the regulator's role, providing processes by which different stakeholder groups (including government, civil society, customers and industry) can engage in policy formulation and decisions regarding energy strategy, and in ensuring transparent and fair monitoring of market activities. These all involve ongoing collaboration between stakeholder groups.

In order for public participation to be effective, the public needs to have access to information and to the decision making process. For example, it needs formal notice of tariff filings, the right to review accompanying information, and to be present at discussions between the licensee and regulatory staff. If, by contrast, the public and its representatives have had no access to the data on which the Commission is relying, and have had no part in agreements between the regulator and the regulated, their opportunity to address a regulatory Commission is unlikely to provide meaningful input. In a case-study funded by USAID on the functioning of the Georgian National Regulatory Commission (GNERC), analyst Peter Bradford noted just such an instance. In a review of an AES Telasi tariff proposal, the uninformed objections of the public were vehement enough to persuade the commission to postpone and ultimately modify a decision. Yet this vehemence, while certainly reflecting public opinion, cannot be said to be based on access to data and decision-making processes. In this sense, we may usefully distinguish between public opinion and public participation.

### **Modifying Utility Assumptions and Customer Behaviors regarding Payment and Usage**

For an industry to be viable, revenues must be forthcoming for services provided. Yet, many government operated utilities around the world suffer huge deficits from uncollectible bills. Most utilities and governments facing non-payment issues and large uncollectible bills assume that customers are not willing to pay for electric service. Research conducted through PUP has demonstrated that consumers assumed to be unwilling to pay are misunderstood, and that consumers are indeed willing to pay -- for a service they feel provides value. If the service is unreliable, of poor quality or otherwise not as expected, it makes it hard for the utility or any group to make the case for payment. In several places, it is not the poorest customers who do not pay, but those with connections to utility managers, high political positions or other positions of privilege where corruption is simply a way of life. Corruption may also come in form of skimming from collected revenues, and for this reason, it is important to distinguish between revenues collected at the retail level and

revenues paid to the wholesale market. Sometimes, of course, the problem *does* lie with consumers, and in these cases, education as to safety and legal issues surrounding electricity theft, and the implications to all ratepayers of non-payment practices, must be addressed. Public participation techniques are essential in arriving at a wholesale change in the variety of attitudes, behaviors and misperceptions that surround issues of nonpayment.

### **Working with Stakeholders to Build Capacity**

There are a variety of groups in the energy sector that exist to represent constituencies in understanding and promoting positive change. Consumers can be represented by neighborhood or community groups, church leaders, or formal advocacy organizations. Businesses can be members of Chambers of Commerce or Trade Associations that include energy issues on their agendas. Non-governmental organizations represent another set of stakeholders that are often issue-based or focused on addressing the problems of a particular group within society. To be truly effective at representing their constituencies, NGOs, member groups and advocacy organizations must be knowledgeable about issues, and must be able to understand and articulate clearly the implications of various decisions and policies for their members. These groups often are the front line of participation on behalf of much larger populations, and as such, it is essential that they know how to participate in the process of energy decision-making. Active positive engagement with stakeholder groups is essential and will smooth the way for successful change at all levels because these groups can serve as the conduit for the critical exchange of information between energy sector players and those who benefit from sector services.

### **Role of Journalists and the Media**

The media as well is supposed to represent all sides to an issue, unless it is controlled by one faction such as government. But journalists cannot write about what they do not understand. The media needs to understand energy issues from all perspectives, so it can report accurately on positions and issues, and can help the process of communication move forward. An introductory training seminar for South Asian journalists on power sector regulation produced an immediate increase in the number of articles published on energy issues in both Nepal and Bangladesh. Involving the media can help inform the public so that they can become more involved.

## **Key Lessons Learned and Challenges for Moving Forward**

USAID sponsored a global symposium in March 2004 that allowed for a rich exchange of ideas regarding the challenges that face energy sector decision makers as they proceed with distribution reform, privatization and opening markets to foreign investment. The common thread of interest among all participants was the potential role that public participation can play in helping to smooth the transitions taking place, by increasing understanding of the issues and engaging a wider group of stakeholders in identifying solutions.

Six key findings emerged from the Symposium discussions. These key findings offer a useful set of lessons learned from USAID's recent experiences, as well as laying out some of the challenges that lie ahead as USAID works to increase the role of consumer outreach and public participation in its future energy sector activities.



**Public Participation is a Dynamic Process**

Public participation is critical in environments undergoing structural change, such as the energy sector. However, many energy sector decision makers are accustomed to economic and engineering solutions and are less comfortable with the relatively open-system that public participation implies. The further to the right of the public participation spectrum, the more public input will help determine the next steps to be taken. By engaging in public participation, sponsors accept that they are giving up some level of control over outcomes.

It is also important to note that public participation itself is a process that may evolve. As trust between stakeholders develops, public involvement can be built over time.

**Public Participation Does Not Equal Public Opinion**

People often confuse public participation with public opinion. But while public opinion may be vehement, it is quite separate from the hard work of collectively defining solutions. Public participation implies the responsibility of the public not merely to share an opinion, but to get engaged in decision-making and finding solutions. Similarly, it implies the responsibility of the decision-making body to provide access to information and accountable decision-making processes.

**Public Participation Strengthens Good Governance**

Public participation should ultimately strengthen governance and government institutions by making the process more transparent and helping to build credibility with the public. The former “command-and-control” culture of many energy sectors institutions – whether ministries, government owned and operated utilities or private corporations – may work well when building a power plant, but will not work in facing the current challenges of the industry as a part of changing society. Rather than undermining the strength of these entities, public participation can ensure their effectiveness in the new global era of increased communication and public awareness. It is not a matter of undermining institutions. Indeed, people do not want weak utilities or governments, but they are increasingly demanding that institutions be more responsive.

**Institutionalize Public Participation**

This point speaks to the need to institutionalize stakeholder and public participation as a necessary part of any energy project by determining a strategy for when, where and how it should be incorporated into plans for sector reform, for strengthening regulatory bodies, and for most other energy sector activities. Public participation programs need to work within existing structures (legislative, regulatory, corporate) where constructive engagement of the public can work to inform decision making. Those implementing public participation programs need to develop appropriate strategies that distinguish between policy making, project implementation and service delivery.

**Practical Issues for Implementing Public Participation**

In order to mainstream public participation, three things are needed: (1) a context to define what’s wrong or right with public participation in a particular activity; (2) an institutional base from which to work; (3) resources for public participation. Guidelines for how to implement programs when time and resources are scarce also would be helpful.

**Measuring Public Participation**

Most energy sector decision makers are currently not very familiar with public participation, and few have actually implemented public participation and outreach activities. Thus they have no planning tools for incorporating it into projects or for benchmarking activities. These planning and measurement tools are needed as are guidelines for identifying the optimal equation between the amount of public participation and the achievement of tangible energy results, e.g. process versus product.

## ENERGY REGULATION AS A BASIS FOR GOOD GOVERNANCE

- BY THE INSTITUTE OF INTERNATIONAL EDUCATION

### Trends in Regulatory Reform

As background to the reform challenges facing developing and transitioning countries, this section provides a quick overview of recent trends in regulatory reform. The regulatory reform topics that seem to be most on the minds of reform practitioners are the following:

- ❖ Declining foreign investment
- ❖ Introduction of market forces
- ❖ Restructuring
- ❖ Tariff rationalization
- ❖ Distribution reform
- ❖ Public participation and the role of civil society in the reform agenda

The need for investment and finance has been a primary driver of reform in developing countries to relieve the paralytic burden that subsidies to the power sector have placed on national economies. Estimates of finance needed by the developing countries have been on the order of US\$125 billion per year. While this amount has remained consistently high, since 1997 direct foreign investment has dropped precipitously from over \$47 billion to about US\$12 billion in 2001. Recent figures from 2002 and 2003 reflect a possible turn around in such investment, but even at its peak, foreign investment met less than half of that needed for effective power sector performance. Donor and other development agency support to the power sector has hovered at less than US\$10 billion per year. This leaves a gap of US\$40 billion or more annually.

Domestic investment has replaced foreign investment in a significant portion of investment in generation, so it is possible that, given this recent history, the finance gap may be filled primarily by domestic investment and self-financing. As power sector performance improves it is likely that, as in developed countries, consumers through collection of bills will take on more of the ultimate responsibility for providing a financial base to fund the power sector.

Regulatory reform is key to improving the investment climate in developing countries. Firstly, what we know of investor requirements, both foreign and domestic, strongly supports the need for good governance in the power sector. Surveys by the World Bank of investor concerns place stability of the regulatory process at the top of the list of criteria they use when choosing among alternative investment options. High in their priority is also the ability of government to be compensated for the power it supplies to industry, commerce and residential consumers. Secondly, self-finance can occur only when consumers at all levels pay their bills and pay a rational price for the electricity they receive. Both of these factors depend heavily on an effective and efficient regulatory environment.

Introduction of market forces through independent private power and privatization of existing sector assets has received considerable attention as a solution to the poor performance found in many developing countries. Theoretically, the introduction of competition should lead to much greater efficiency in power sector performance. But this privatization approach has led to much slower than hoped for improvement in most developing countries, so the so-called “Washington consensus” over privatization is currently under close scrutiny.

Privatization in the 1980s, especially in Asia, initially took the form of independent power plants (IPPs). Experience since then with IPPs has been “two steps forward, one step back”. The world financial downturn that took place in the late 1990s, particularly in Asia and Latin America, made paying for power from such plants unaffordable by their host country treasuries. Contracts were abrogated and power purchase agreements were renegotiated, sometimes after long and costly litigation, which in turn caused damage to the investment attractiveness of those countries. The IPP movement did, however, initiate much reform activity and has made apparent the need to reform quality of service and collection of tariffs that can pay for that improved service.

In Eastern Europe and Russia after the collapse of the Soviet Union, economic downturn resulted in a surplus of generation capacity, so IPPs were not needed and privatization took the form of privatization of existing generation assets. As with the IPP movement, distribution was typically not privatized, and reforms that were attempted as in Georgia and Ukraine were more often than not unsuccessful, partly because of inability of consumers to pay and partly because of poor management of the reform process. As a result, income from consumers was insufficient to pay for the power generated and privatization efforts stalled. In Latin America, Chile was the first to privatize its power sector, followed in the early 1990s by Argentina. Argentina’s financial crisis caused the current government to reverse some of the reform efforts and to effectively retake much of the control of the sector.

In summary, the world economic downturn, in combination with a failure to improve quality of service and collection rates have led to a significant slowdown in privatization efforts worldwide. More attention is now being paid to commercialization aspects of the power sector, that is, to establishing the sector on a cost for service basis and to reforming the distribution end of the power sector. Whatever the ownership strategy—either public or private—reforms now underway typically depend on some form of restructuring, most usually on unbundling or separating generation, transmission and distribution into separate stand-alone entities.

Tariff rationalization was mentioned above as the sine qua non of power sector restructuring. Without a source of revenue to repay debt, maintain and refurbish or replace equipment, pay competent staff and to pay for an effective regulatory process, there can be no reform. This is only common sense, but the harsh reality of achieving tariff reform has formed a major stumbling block to the reform process. Public opposition to higher prices, even to the point of violence and overthrow of regimes has caused developing country officials to think very carefully about how to reform prices for electricity.

The above issues—providing an enabling environment for investment, privatized or otherwise autonomous operation of power sector enterprises, unbundled elements of the sector, rational tariffs—are foundations necessary for power sector distribution reform. The expression “where the rubber hits the road” received much play at courses on power sector reform and on distribution reform.

Earlier efforts to introduce private generation through so-called independent power projects (IPPs), while partially successful, have not lived up to expectations for them as solutions to power shortages, but they have been effective in pointing up the need for reform at the distribution end of the power sector. Poor performance at the distribution level has undermined reforms in generation and transmission, and without reform in distribution, reform elsewhere is threatened.

Finally, it has become increasingly apparent that more public participation is needed in the reform process. Better ways to deal with labor and other citizen advocacy organizations are a prerequisite to political stability of reforms achieved. Examples abound in Latin America, Asia, Eastern Europe and Africa where demonstrations or riots have stalled or have begun to reverse the reform process. In some countries, reform initiatives have not been started because of public opposition.

The role of civil society in participating in providing electricity services—especially in the distribution of energy to urban and rural communities through participation of non-governmental organizations and community based organizations—is also becoming more and more evident.

These trends then are the setting under which EETP training took place. The following section discusses the main issues or challenges of power sector regulatory reform that emerged in discussions with participants and instructors during the program.

### **Challenges Facing Power Sector Regulatory Reform**

The following provides a list of critical challenges that face power sector regulatory reformers in developing and transitioning countries. In a specific country setting, the issues will take modified forms from those as stated below. This list is meant to spark discussion about what directions future energy training should take with respect to power sector regulatory reform.

#### **Building Understanding and Commitment to Reform**

- ❖ How to build understanding of the need for reform and for regulation.
- ❖ How to focus on priorities of what needs to be fixed.
- ❖ How to convince political leaders to build a strong and stable commitment to reform.
- ❖ How to build a strong and stable commitment to reform at the sub-national or state level.

### **Structuring a Regulatory Agency**

- ❖ What are the critical functions of a regulatory agency?
- ❖ How will these regulatory functions change over time?
- ❖ What is the role of the regulators and how to build competence among regulators and regulatory agency staff?
- ❖ What is an appropriate regulatory framework that is consistent with the existing governance framework in the country?
- ❖ What has been experience with building independence in regulatory agencies?

### **Making the Transition**

- ❖ How to make the transition to a regulated environment.
- ❖ How to compensate for weak rule of law or other weaknesses of governance.

### **Transparency and Corruption**

- ❖ What rules, procedures and protocols have been effective in increasing transparency and in reducing corruption?
- ❖ What public participation mechanisms in regulatory proceedings have been effective in improving the quality of regulation, in increasing transparency and in reducing corruption?

### **Tariff Rationalization**

- ❖ How to change the mindset that electricity is a “right” and therefore a commodity that should be provided free or at a much-subsidized cost. How to build willingness of government to reduce subsidies.
- ❖ How to best design cost-of-service tariffs based on economic and political realities.
- ❖ What are best practices and experience with multi-year tariffs, subsidies and cross-subsidies? With lifeline rates?
- ❖ How to benchmark quality of service including reliability, standards for technical and commercial losses, consumer satisfaction, collection efficiency etc.
- ❖ How can we use social marketing to encourage higher quality of service?

### **Increasing Access**

- ❖ What are best practices with regard to ‘obligation to serve’ regulation?
- ❖ What are participatory models for rural access? What models for urban access? What is the role of the regulatory agency in facilitating these models?
- ❖ How to best to regulate highly decentralized generation and distribution enterprises.

### **Reigniting Power Sector Investment**

- ❖ How can understanding be built among regulators of the devastating impact of actions such as renegotiating tariffs, renegotiating terms of security packages, failure to honor project performance guarantees, and shifting policy and rules to suit frequent changes in political experience?
- ❖ How to build regulator and staff competence and understanding of private and public finance models, of market mechanisms.

### **Restructuring and Privatization**

- ❖ How can restructuring or privatization strategies be tailored for a given country's or state's political environment, level of economic development, and tradition of civil society involvement?
- ❖ What are best practices regarding franchise licensing, privatization of power companies (generation or distribution), soliciting private power project bids and contract operation management?
- ❖ What best practice experience is available in sequencing and pacing restructuring reform?

### **Regulating “Public Good” Functions**

- ❖ What has been regulatory experience with market transformation mechanisms for energy efficiency? With regulatory driven demand side management?
- ❖ What experience is there in developing countries regarding environmental protection at the regulatory agency level?

### **Regional Cooperation**

- ❖ What experience is there of best practices in harmonizing regulation within regional grids?
- ❖ How knowledge within national grids on commercial, technical and legal aspects of electricity spot markets and exchanges be shared?
- ❖ What best practice experience is there in designing regional power grids and in balancing interests of large and small country participants?
- ❖ How market power problems in smaller grids be minimized?

### **Governance Roles of Stakeholders in Power Sector Regulatory Reform**

Progress in reforming the power sectors of developing countries has been disappointingly slow. The slowness is commonly attributed to the lack of good governance of the sector: lack of stable political support, lack of rule of law, weak institutions, and corruption, in short, lack of an environment that enables the market or good commercial practice to flourish. Politics, law and institutions have dominated the reform process. In several countries, public opposition has delayed or blocked policy reform and has led to destructive failures.

The past two decades have seen dramatic shifts in approaches to power sector reform from one based on improving technology and management, to private participation in power generation stations, to restructuring the power sector. Power sector reform is at its core a political process. Inescapably, reforms take place in the context of competing interests. Regulatory reforms that can facilitate better performance in the sector thus have to take into account the interests and role that various stakeholders play in the reform process. They also have to reconsider the roles of government, or private business and of civil society.

Who are stakeholders in power sector reform? In any policy reform, stakeholders are those individuals or groups that make a difference, or that can make a difference in the outcome of a reform process. Stakeholders include those who are affected by the process and who are in a position to exercise influence on the process. In power sector reform, everybody is either a consumer of electric power or someone who lacks access to electric power. Consequently everybody is potentially affected by reform measures, so everybody is potentially a stakeholder. Not all of those affected get actively involved in trying to influence the process, so in effect, the number of stakeholders is self limiting by the number of those who get actively involved. In the practice of reform over the past two decades, those stakeholders most active have been government agencies themselves, businesses who need electricity to function, labor organizations that represent sector workers and, to a lesser extent, environmental and other non-governmental and community groups concerned about pollution or access issues.

Until the most recent reform effort of the 1980s and 90s, the role of government has been most often that of the supplier of electric power. Government activity typically was that of a “vertically integrated utility” that carried out all of the generation, transmission and distribution functions necessary to provide electrical services to homes, offices, farms and factories. By any measure—technical, economic, financial—governments in most developing countries have by and large failed in that task. Almost always, as stated above, the failure was the result of poor governance of the sector.

While the concept of privatization is still being debated, there is strong agreement that autonomy of sector organizations is critical to successful reform. Ownership can be in private or public hands, but to be effective utility operations must be run on a business basis, that is they must rely on their own operations to recover their costs. Political considerations that interfere with that cost recovery lead to financial and technological collapse of the sector. The proper role of government is to create the environment that enables utilities to operate on a business basis.

In spring of 2004 the prevailing opinion is that newly formed regulatory agencies may be the best vehicles to build that government role as enabler. This is not to say that other branches or agencies of government are less important. If the laws of the country do not provide a strong foundation for reforms and for an effective regulatory body, then reforms will not be sustainable. This then is the role of the legislature, to create the foundation in law that allows utilities, either publicly or privately owned, to function with a minimum of political interference. If the legislature fails to establish such a foundation, other ‘second-best’ means must be substituted. The concept of ‘regulation by contract’ has been developed whereby pressures from outside the country may be brought to bear if regulatory agencies cannot rely on the country’s rule of law to ensure that they carry out their proper function.



Other government agencies at the national, state and local level need to provide this same enabling role. Because subsidy to the power sector has been the eventual obligation of the national treasury, there has been a tendency in many countries for state or provincial government to give up their responsibilities for good financial management and to rely on the national government to provide subsidies to stave off insolvency. As a consequence, national level officials that now see the need for better business practice the power sector have difficulty in relying on sub-national officials who traditionally have not had to worry about financial failure. The challenge to reform remains that of building such state and local support for reform.

The importance of rule of law and the role of an effective and independent judiciary cannot be overstated at this point in the progress of reform. The lack of an effective judiciary has been perhaps the greatest deterrent to private sector investment in the power sector. Clear and enforceable boundaries on the role of different levels of government depend on rule of law and a strong judiciary as well and without those limits, public utilities remain overly vulnerable to political intrusion.

The role of the private sector—both domestic and international—remains crucial to reform, even where the utility sector remains publicly owned. First of all, it is the rapid growth of the private sector that has pressed for reform of the power sector. Businesses that rely on electric power to produce or to distribute goods have been hindered by the low quality and availability of electric power. Secondly, some business has played a significant negative role in poor performance of the sector by not paying for electrical services provided, so it is the responsibility of business and government alike to build a culture of paying for services received. (Government agencies have been perhaps even larger non-payers than are private businesses.) Third, the power sector needs investment capital. Financial requirements on the order of US\$100 billion per year that are needed for maintenance and expansion of power sectors in developing countries are not available from public sources—either domestic or international. Private investment is key as is reform of the sector so that it can self finance its operation and growth through its own tariff systems. The necessity of and means to achieve self financing have not received much attention in discussions of reform strategies.

The role of civil society—those groups outside of government that are organized to advocate their own interest or to assist in the provision of electricity services—is also critical to successful sector reform. It too has received little attention in discussions about power sector reform strategy. Such groups include consumers, NGOs, labor, community based organizations and various groups—agricultural, industrial or otherwise that represent users of electricity. Regulatory reform activity can take advantage of the interest and actions of these stakeholder groups in advocating reform and in providing electrical service. A tradition has evolved since the mid 1960s of relying on stakeholders themselves to provide their own public services. In the United States this tradition revolves around the concept of community development corporations—not for profit or for profit businesses that are staffed largely by community residents and that directly provide services to the community. In the power sector, agricultural water user associations, community based organization involvement in slum electrification, electric cooperatives of farmers are three examples of this approach.

# IQC TASK ORDERS

Under the EETP IQC, USAID implemented 27 separate task orders from 1998 through 2004. The task orders have been categorized and listed below as worldwide, regional, or country-specific. Collectively, the work performed under these task orders spanned the full range of major substantive energy development issues and incorporated a variety of proven learning and knowledge transfer techniques to ensure that institutional and individual development and improvement continued beyond the time span of the specific task order.

## Worldwide Task Orders

### ❖ **Energy Sector Regulation and Restructuring (IIE)**

A number of USAID-assisted countries have begun to restructure their electricity, oil and gas sectors and have undertaken reforms to commercialize and privatize state-owned operations to increase access to environmentally sound and socially equitable energy. This task order increased the knowledge and skills base of USAID's local partners in their efforts towards energy sector regulation and restructuring.

### ❖ **Environmental Management and Policy (IIE)**

This task order helped build the knowledge and skills base in USAID client countries to increase access to environmentally sound energy development. It addressed the environmental challenges in a changing energy sector by focusing on strengthening local institutional capacity, building partnerships between public and private sector decision-makers and developing management skills within key stakeholder organizations responsible for the implementation of environmentally friendly energy policies and programs.

### ❖ **Invitational Travel in Support of Global Climate Change-related Workshops, Conferences, and Other International Fora (CORE)**

This task order was a mechanism that provided the opportunity for developing country energy sector stakeholders from government, the private sector, NGOs, and financial institutions to participate in international and USAID-sponsored conferences, workshops and courses in order to enhance their knowledge of best practices for energy development, management, and operations.

### ❖ **Private Sector Participation in Clean Air Development, Management, and Operations (CORE)**

This task order increased the knowledge and skill base of USAID's local partners responsible for reforming their countries' electric power sectors, improving energy efficiency and energy availability, stimulating investments in renewable energy projects, and improving the economic performance of their power sectors. Local partners included NGOs,

public utilities, regulatory boards, ministries of energy and industry, local village chiefs, private sector entities, third country bilateral aid agencies, multilateral development banks, and numerous consumer groups.

❖ **Public Understanding and Participation (AED)**

This task order incorporated training and technical assistance for USAID staff around the world to develop the tools and skills necessary to enhance the public's understanding of, and participation in, energy policy formulation in developing countries. A major goal was to incorporate democratic principles into the energy policy development process.

❖ **Technical Advisory Group (AED, CORE, IIE)**

This task order funded technical leadership and quality control to the EETP IQC and served as a focal point for incorporating lessons learned from previous activities under the Energy IQC into subsequent activities as they relate to USAID Intermediary Results teams. A multitude of activities were carried out under this task order, including training needs assessments, in-depth program follow up evaluations, and development of best practices documents.

❖ **Technical Leadership Training Program (IIE)**

This task order was designed to build leadership capacity in environmentally friendly energy development and greenhouse gas emissions reduction that was both friendly to the environment and beneficial to economic growth. The training series focused on the topics of energy efficiency, renewable energy, urban environmental management and global climate change technical and policy issues.

## **Regional Task Orders**

### **Asia and Near East**

❖ **South Asia Regional Initiative for Energy – Training (AED)**

This task order provided assistance with the development of energy resources to promote economic growth in South Asia through the use of training workshops, institutional capacity building, and outreach education. Major areas addressed included development of a regional grid and energy exchange; legal, policy, and regulatory framework reform; development of regulation and regulatory bodies; and improvements in energy efficiency.

❖ **South Asia Regional Initiative for Energy – Rural Energy Services (CORE)**

This task order provided capacity building in clean energy production and use, primarily in rural areas of SARI/Energy countries (Bangladesh, Bhutan, Nepal, India, Sri Lanka, and The Maldives) through designing, developing and delivering in-country and regional training courses workshops, roundtables, seminars, study tours, conferences and data exchange services.

## Europe and Eurasia

### ❖ **Eurasia Climate Change Training Program (IIE)**

This task order was targeted towards strengthening local institutions through education on the issues associated with greenhouse gas emissions, particularly from the perspective of country economies and country opportunities. The training focused on building capacity to stimulate emissions trading and joint implementation investments; increasing awareness and building support for climate change activities; and helping decision-makers identify policy changes necessary to address the climate change challenge.

### ❖ **Strengthening Regional Energy Linkages – Caucasus (AED)**

This task order developed better awareness among the governments and utilities of the Caucasus (Armenia, Azerbaijan, and Georgia) about the benefits to be achieved through closer cooperation in the energy field and steps to be taken to achieve those benefits. Focus was upon the restoration of parallel operations of the countries' energy systems and creation of a united energy system based on a market economy with potential for development into a regional electricity market.

## Sub-Saharan Africa

### ❖ **West Africa Climate Change Workshop (AED)**

This task order facilitated the West and Central Africa Regional Climate Change workshop held in Dakar, Senegal. This workshop provided technical training and capacity-building tools for climate change assessment to personnel from numerous countries in West and Central Africa.

## Country Task Orders

### Albania

#### ❖ **USAID Support for Commercialization, Training, and Utility Advisor for Albania (CORE)**

USAID supported the provision of capacity building, training, and institutional strengthening advisory services to the National Utility (KESH) and the Ministry of Industry and Energy. Through targeted training programs, workshops, roundtables, invitational travel, and on-the-ground assistance, the program assisted in enhancing the Government of Albania's capacity to address power sector reform issues ranging from technical and restructuring problems, economic and financial issues, and deficiencies in human resource management.

### Armenia

#### ❖ **Armenia Energy Training Program (AED)**

This task order supported in-country training programs that focused on issues associated with natural gas and electric power sector reform.

## **Bangladesh**

### ❖ **Bangladesh Energy Training Program (IIE)**

This task order provided capacity building to the power, oil and gas sector institutions in Bangladesh, with the objective of furthering the efficient development and reform of the energy sector. The project was tailored to meet the country's specific needs and provided state-of-the-art training through a carefully selected set of twenty courses and workshops.

### ❖ **Bangladesh Power Development Board Senior Management Training (AED)**

This task order developed five training programs and a trainer-of-trainers program for senior- and mid-level managers of the Bangladesh Power Development Board (BPDB). These programs were designed to improve the managers' leadership skills and the operating policies and procedures of the BPDB.

## **Brazil**

### ❖ **Brazil Energy Training and Outreach Program (IIE)**

This task order focused on providing technical assistance to Brazilian energy institutions to build, optimize, and develop their capacity for meeting the challenges of providing clean and efficient energy production and increase the role of private sector participation. Through this program, training developed the skills of key in-country stakeholders to support Brazil's development of institutional capacity for meeting the energy needs of a developing economy.

## **Egypt**

### ❖ **Egypt Electricity Regulatory Project (AED)**

This task order established and developed the capabilities of the nascent Egyptian Utility and Consumer Protection Regulatory Agency (Agency). Major task order goals included providing the necessary personnel and resources for the Agency to become operational as rapidly and efficiently as possible, and helping the Agency establish the necessary legal and legislative foundation from which to operate.

### ❖ **Egypt Environmental Policy Program (AED)**

This task order supported policy, institutional, and regulatory reforms in the Egyptian environmental sector, focusing on reducing economic and institutional constraints, promoting cleaner and more efficient energy use, reducing air pollution, improving waste management, articulating sustainable tourism best practices, and conserving nature. This task order reinforced policy development and implementation with public awareness and training to increase the participation of Egyptian partners, NGOs, and the general public, and created environmental private-public partnerships.

❖ **El-Kureimat Power Plant Training Analysis and Training Project (IIE)**

This task order identified and initiated training necessary to maximize the productivity and performance of the El-Kureimat Power Plant Operations Department personnel. The objective was to ensure that these personnel can operate the plant in an optimum manner during all operating conditions.

**Indonesia**

❖ **Indonesia Electricity Sector Restructuring (IIE)**

This task order developed institutional capacity at the Ministry of Energy and Mineral Resources and supported the Indonesian government's program to restructure Indonesia's electricity industry and to create an appropriate regulatory framework. The task order consisted of three major components: training of staff; development and implementation of a Change Management Plan that addressed the barriers to electric industry restructuring, built support for the restructuring process, and prepared all stakeholders to participate fully in the restructured market; and assistance in the coordination and implementation of technical assistance projects and related activities financed by the Asian Development Bank.

❖ **Indonesia Energy and Environment Training Program (IIE)**

This task order focused on energy activities that reduce the emission of greenhouse gases that contribute to Global Climate Change through increased efficiencies in the supply and utilization of energy, and through cleaner production of energy. This task order provided: (1) a series of in-country courses on environmental management and modeling, (2) U.S.-based study tours on power plant efficiency improvement, (3) NGO development and training, and (4) institutional strengthening of the Indonesia Energy & Environment Training Program Alumni Association.

**Peru**

❖ **Peru Energy Services Companies Training Program (AED)**

This task order supported a series of workshops designed to improve the business practices and success rate of Peruvian energy services companies and other stakeholders, including financial institutions, policymakers, and end-users. It provided opportunities for small- and medium-sized energy services companies to obtain first-hand practical experience in designing and implementing projects through interaction with appropriate experts.

**Philippines**

❖ **Philippines Energy Environment Training Program (AED)**

This task order assisted the Government of the Philippines in formulating and implementing policies in energy sector reform, renewable energy, natural gas, and reduction of vehicle emissions in order to alleviate poverty, improve global competitiveness, encourage more private sector investments, privatize government corporations, and improve the quality of life for Filipinos. The task order also promoted private-public partnerships

to enhance broad-based economic development, and encouraged collaborative partnerships to support the generation of more private sector investments, especially in the privatization of government corporations in the energy sector.

## **Ukraine**

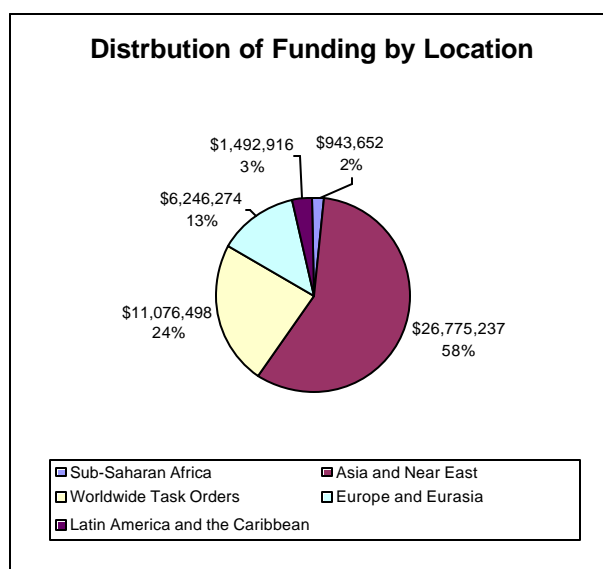
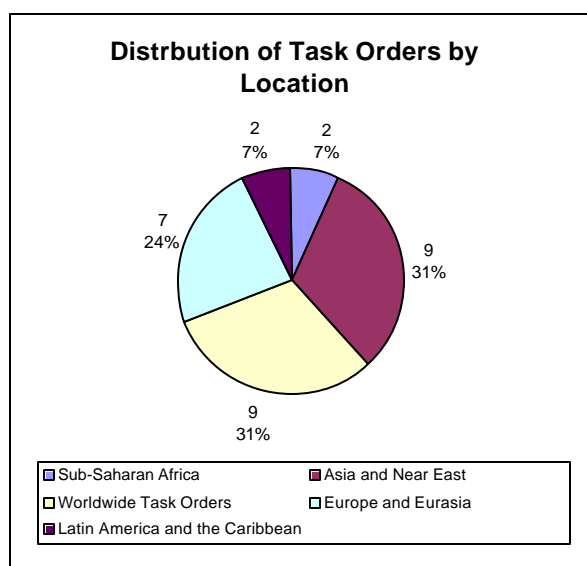
### **❖ Ukraine Energy MBA Program II – V (IIE)**

This task order provided five one-year MBA courses to develop future energy management personnel in order to meet the needs of the industry to successfully operate in a market economy. The task order included a series of short-term technical training courses in Ukraine for senior decision-makers and a U.S. internship and study tour for senior executive management of Ukraine's energy sector.

## AGGREGATE TASK ORDER STATISTICS

**Table 1: IQC Usage by Region**

This table tracks the use of the IQC by region. The graphs below represent the distribution of task orders and the distribution of funding by location.



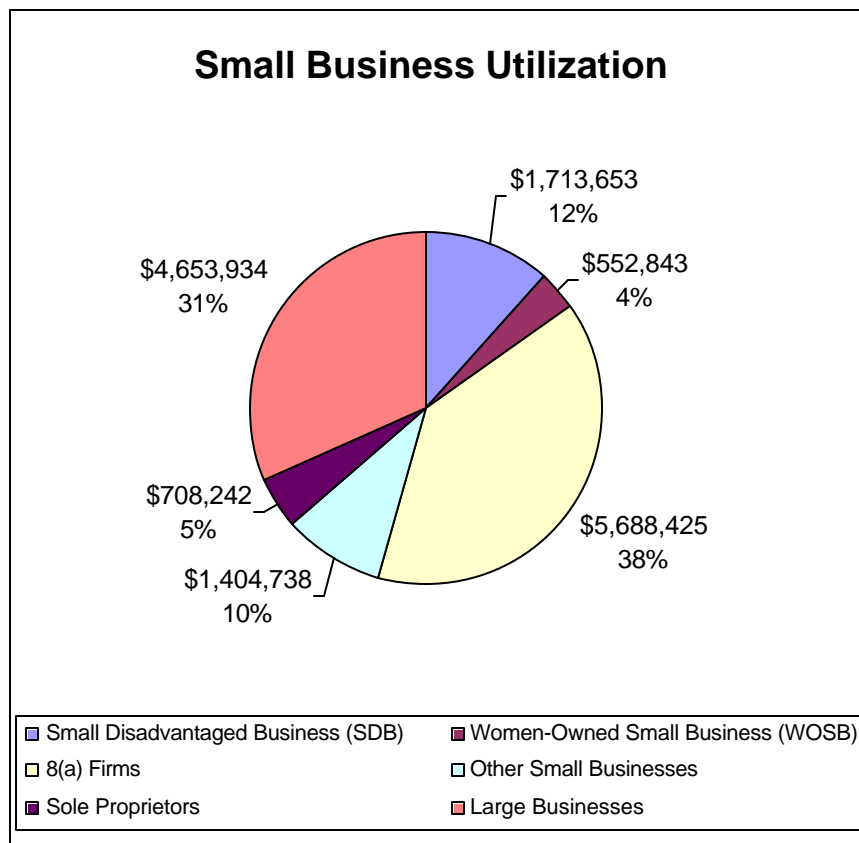
**Table 1: IQC Usage by Region**

|                                 | Task Orders |             | Funding <i>(including field support)</i> |             |
|---------------------------------|-------------|-------------|--|-------------|
|                                 | Number      | Percent     | Number                                   | Percent     |
| Sub-Saharan Africa              | 2           | 7%          | \$943,652                                | 2%          |
| Asia and Near East              | 9           | 31%         | \$26,775,237                             | 58%         |
| Worldwide Task Orders           | 9           | 31%         | \$11,076,498                             | 24%         |
| Europe and Eurasia              | 7           | 24%         | \$6,246,274                              | 13%         |
| Latin America and the Caribbean | 2           | 7%          | \$1,492,916                              | 3%          |
| <b>Total</b>                    | <b>29</b>   | <b>100%</b> | <b>\$46,534,577</b>                      | <b>100%</b> |



**Table 2: Small Business Utilization**

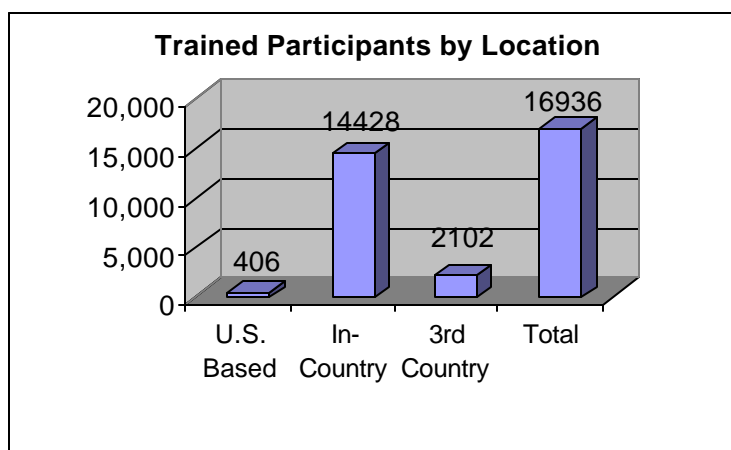
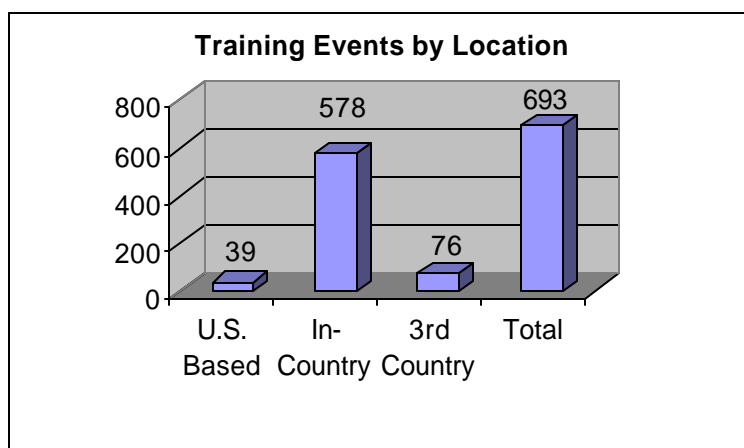
All IQC prime contractors were given a mandate to employ small businesses to the maximum extent possible. Categories of small businesses that received zero funding appear in the table below but not in the pie chart.

**Table 2: Small Business Utilization**

|  | Funding             |
|--|---------------------|
| Small Disadvantaged Business (SDB)   | \$1,713,653         |
| Women-Owned Small Business (WOSB)  | \$552,843           |
| Historically Black Colleges and Universities (HBCU) and Minority Institutions (MI) | \$0                 |
| HUBZone Small Businesses (HUBZone SB)  | \$0                 |
| Veteran-Owned Small Businesses   | \$0                 |
| Service-Disabled Veteran-Owned SB  | \$0                 |
| 8(a) Firms   | \$5,688,425         |
| Other Small Businesses   | \$1,404,738         |
| Sole Proprietors   | \$708,242           |
| Large Businesses   | \$4,653,934         |
| <b>Total</b>   | <b>\$14,721,835</b> |

**Table 3: Training Events**

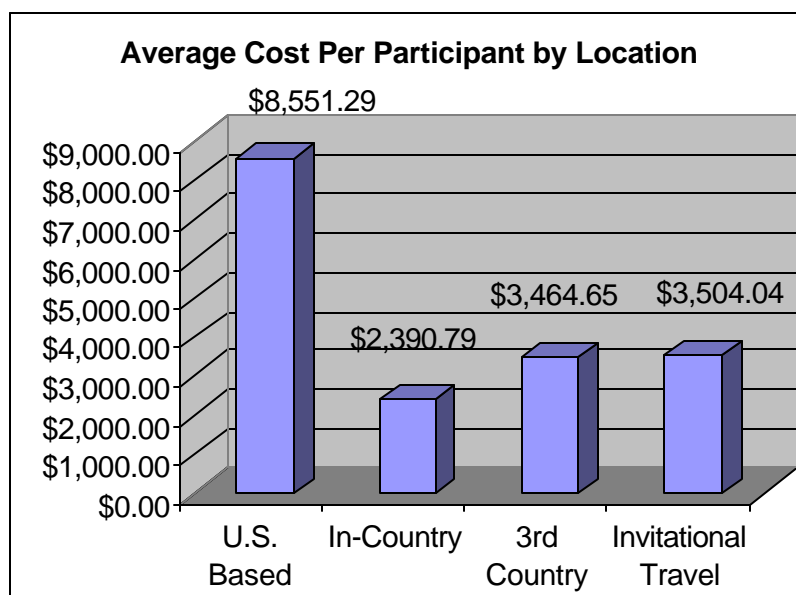
This table represents the number of training events that were conducted under the EETP IQC. The two charts demonstrate the number of events by location and the number of participants by location, respectively. This total number of participants counts those involved in invitational travel as third country trainees. Invitational travel indicates that USAID provided logistical support for travel and other event-related arrangements for participants to attend IQC-related workshops, conferences or other international fora.

**Table 3: Training Events**

|  | U.S. Based | In-Country | 3rd Country | Total  |
|--|------------|------------|-------------|--------|
| Number of Events by Location             | 39         | 578        | 76          | 693    |
| Number of Participants by Event Location | 406        | 14,428     | 2,102       | 16,936 |

**Table 4: Training Cost**

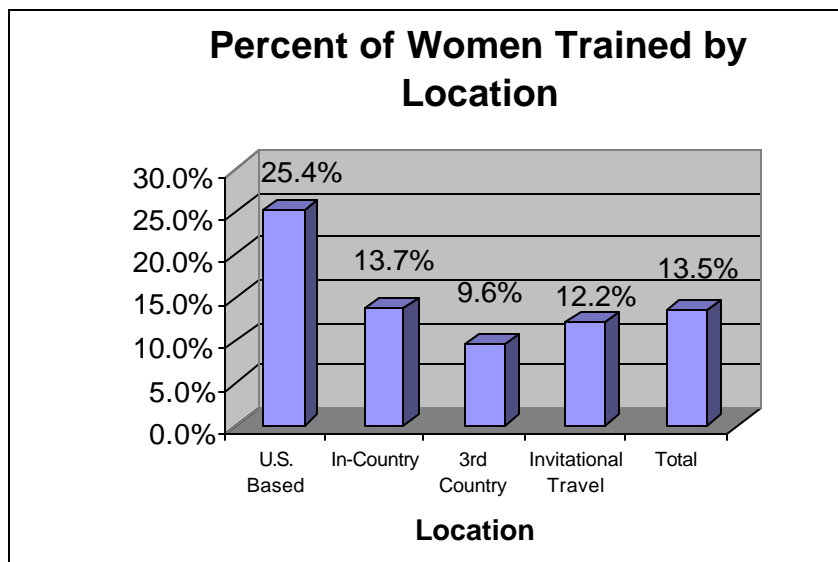
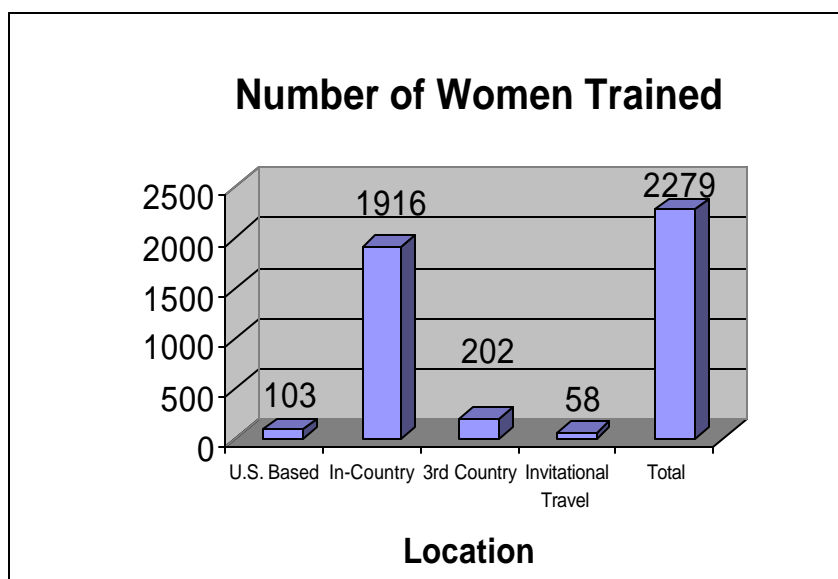
This table shows the average cost of training per participant. The participants have been divided depending on whether the training was done in the same country as the main task order activity, the U.S., or a third country. Invitational travel indicates that USAID provided logistical support for travel and other event-related arrangements for participants to attend IQC-related workshops, conferences or other international fora. The cost data have not been adjusted for the period of time participants have been in training.

**Table 4: Average Cost per Participant Attending Training Event**

|                     | No. of Participants | Total Costs         | Average Cost per participant |
|---------------------|---------------------|---------------------|------------------------------|
| U.S. Based          | 406                 | \$3,471,825         | \$8,551.29                   |
| In-Country          | 13,951              | \$33,353,933        | \$2,390.79                   |
| 3rd Country         | 2,102               | \$7,282,687         | \$3,464.65                   |
| Invitational Travel | 477                 | \$1,671,426         | \$3,504.04                   |
| <b>Total</b>        | <b>16936</b>        | <b>\$45,779,871</b> | <b>\$2,703.11</b>            |

**Table 5: Participants**

This table illustrates the breakdown of training by gender under EETP IQC training programs.

**Table 5: Number of Participants by Location and Gender**

|                     | Female | Male   | Total  | % Female |
|---------------------|--------|--------|--------|----------|
| U.S. Based          | 103    | 303    | 406    | 25.4%    |
| In-Country          | 1916   | 12,035 | 13,951 | 13.7%    |
| 3rd Country         | 202    | 1,900  | 2102   | 9.6%     |
| Invitational Travel | 58     | 419    | 477    | 12.2%    |
| Total               | 2279   | 14657  | 16936  | 13.5%    |

## ILLUSTRATIVE DELIVERABLES

The following are selected deliverables that were developed and produced for the specific noted task orders under the EETP IQC. Electronic copies of these deliverables can be found on the accompanying CD-ROM. For information on these, and other deliverables produced under the EETP IQC, please contact the indicated contractor.

### Worldwide Task Orders

#### Energy Sector Regulation and Restructuring (IIE)

- ❖ **Presentation on Advancing Distribution Reforms in India**  
Given by Mr. Gaurav Bhatiani of USAID on the opening day of the Second Training Program on Distribution Systems Upgrades and Modernization. Discusses the various financial, technical, and operational problems confronting distribution systems in India today, and describes the progress achieved in the reform process of the last 4 years and USAID's upcoming DRUM project.
- ❖ **Presentation on Reforming Distribution in India**  
Delivered by Mr. Probir Neogi of Noida Power Co. Ltd. on the opening day of the Second Training Program on Distribution Systems Upgrades and Modernization. Provides an overview of a number of critical issues affecting the distribution utility sector in India, including corporate social responsibility, energy accounting, information technology applications, revenue models, and the economics of tariffs.
- ❖ **Presentation on Critical Review of Power Sector Development in India**  
This training manual on the critical issues underlying power sector development in India was developed for a Professional Course on Sustainable Energy Development for IAS Officers. The manual reviews the power sector reform process in India and highlights key elements of the new "Blueprint for Power Sector Development".
- ❖ **Presentation on Financial Sustainability of State Utilities in India**  
Developed for a Professional Course on Sustainable Energy Development for IAS Officers. The Manual provides an analysis of financial performance in Indian State Electricity Boards, discusses the financial impact of distribution reforms, and describes distribution management practices that support improving the financial performance of utilities.
- ❖ **Energy Sector Training Needs Assessment in Mozambique**  
After several meetings with the regulatory commissioner in Mozambique, a Energy Sector Training Needs Assessment was written, which reflects both short term and long term training needs.

- ❖ **Training Manual on Management of a Distribution Company: Metering, Billing, and Customer Service (Nigeria)**  
Offers extensive presentation and reference materials for Distribution Management and change management.
- ❖ **Presentation on Options for Reform on Nigerian Natural Gas Industry**  
Presentation made by a local Nigerian attorney, specializing in energy and natural gas issues, during the workshop on Natural Gas Contract Negotiation. Provides an overview of options for reform under Nigeria's Natural Gas Strategy.
- ❖ **Presentation on Key Provisions of A Power Purchase Agreement**  
Presentation made by U.S.-based workshop instructor, Mr. Thomas West, an attorney specializing in energy law and contracts, during the workshop on Negotiating Large Power Purchase Agreements.
- ❖ **Presentation on Nigerian Power Sector Reform: Grid and Network Regulation**  
Presentation made by the workshop instructor, Ms. Beatriz Arizu, an electricity regulation expert from Argentina, during the workshop on Power Sector Regulation and Restructuring. Details issues related to the implementation of regulation in the wholesale power sector.
- ❖ **Presentation on Nigerian Power Sector Reform: Utility Organization and Operation**  
Provided participants of the Tariff Structure and Rate Making workshop with an understanding of electricity sector stakeholders, valuation, and the possible market structures – an important basis for electricity tariff setting.
- ❖ **Electric Utility Planning and Strategic Investment**  
Training manual provided to participants of the workshop on Electric Utility Planning and Strategic Investment. Provides the building blocks for making decisions about utility management and operations in the Nigerian, and developing country, context.
- ❖ **Workplan for Southern African Development Community Energy Training**  
Training workplan based on the results of an intensive training needs assessment.
- ❖ **Presentations from Zambia Regulation and Restructuring Workshops**  
The following is a sampling of the training materials produced for the Zambia training program including case studies and homework problems and solutions:
  - ❖ Power Markets
  - ❖ Traditional Cost of Service
  - ❖ Pricing Transactions
  - ❖ Transmission Issues (Parts I and II)
  - ❖ Case Study of California
  - ❖ Homework and Solutions

- ❖ **Summary of Zambia Regulation and Restructuring Training Program**  
Summary of the activities and results of the Zambia Regulation and Restructuring Training Program

### **Environmental Management and Policy (IIE)**

- ❖ **Spanish-language report on Pollution Prevention for Cleaner Production in Latin America and the Caribbean**  
Set of Spanish slides on the above workshop presented in Queretaro. Similar workshops in Spanish were presented in Panama and the Dominican Republic, focussing on different sectors of industry.
- ❖ **Program summary of Pollution Prevention for Cleaner Production in Latin America and the Caribbean**  
Program summary of the series of workshops on pollution prevention in Latin America and the Caribbean, including activities, accomplishments and lessons learned.
- ❖ **Success Story: Training in Cleaner Production Results in Savings in Electricity, Water Consumption, and Pesos for Local Industry in Mexico**  
Success story from the Cleaner Production workshops based on follow up meetings with participants and the implementing partner in Queretaro, Mexico.
- ❖ **Presentation describing the Tocantins Energia, Educacao, and Participacao (TEEP) project.**  
Presentation of the TEEP project. Includes a summary of the initial evaluation.
- ❖ **Presentation on Perspectives on the Sustainable Use of Hydroelectric Power in Tocantins**  
Presentation describing the hydroelectric plants recently constructed in the State of Tocantins as well as future plants to be constructed. It also considers the environmental, social, cultural and economic impact of these plants on the region.
- ❖ **Qualitative Evaluation of the Results of the TEEP Project**  
Summary of the first year (of two) results from the TEEP project.
- ❖ **Program Summary for TEEP Training**  
Short summary of the activities in and results of the entire TEEP project.

## **Invitational Travel in Support of Global Climate Change-Related Workshops, Conferences, and Other International Fora (CORE)**

### **❖ Participant Survey Report - South Asia Regional Initiative for Energy Rural Energy Services (RES) Participants**

Results of the surveying of over 105 participants that participated in 6 regional energy events in the area of Rural Energy Services. With a response rate of better than 25%, an analysis of the responses was conducted to relate the results from the survey to specific SARI/Energy Intermediate Results.

## **Private Sector Participation in Clean Energy Development, Management & Operations (CORE)**

### **❖ Workshop and Roundtable materials for Issues and Options for Rural Electrification in Zambia**

Based on a Desk Study Report, the Roundtable served to sensitize energy sector officials, regulators, consumer groups, and other stakeholders to the regulatory, policy, financial, and institutional capacity requirements for implementing a sustainable and successful rural electrification program.

### **❖ Workshop - Issues and Options for Rural Electrification in SAPP Member Countries**

The workshop was based on a Desk Study Report, designed as a reference document, to facilitate discussions among Government participants and the stakeholder community on the best practices in institutional, business, and financial approaches to rural energy service delivery within the framework of sustainable rural development for poverty alleviation.

### **❖ Workshop - Rural Electrification Planning in Lesotho**

The workshop was based on a comprehensive Desk Study Report, providing variety of successful best practices including the establishment of a rural electrification agency and a rural electrification fund that could be considered by Lesotho authorities, as it embarks on an ambitious rural electrification program.

## **Public Understanding and Participation (AED)**

### **❖ Energy Market Research in Indonesia (with Appendices)**

Identified the range of existing consumer and stakeholder research and findings in Indonesia and investigated existing information gaps between stakeholder and consumers. The document reviews secondary literature describing consumer and stakeholder characteristics, perceptions and behaviors toward energy issues, and non-energy related literature that provided insight on contextual issues.

### **❖ Zambia Customer Service Training Manual**

Developed from a training seminar entitled "Customer Service – Theory and Practice," that was part of the capacity-building efforts conducted on behalf of



USAID for the Energy Regulatory Board of Zambia. The manual addresses numerous important customer service issues, including the importance of internal and external communications, consumer affairs, and public outreach for regulatory agencies and energy utilities.

❖ **Conference Materials from the Public Understanding and Participation Symposium in South Africa**

Materials from this global seminar include:

- ❖ **Presentation on Social Marketing**  
Introduced the concept of social marketing, discussed the contexts in which it may be applicable for the energy sector, and provided a series of examples.
- ❖ **Introduction to Public Participation**  
Presented the foundations for work in public participation by introducing the basic concepts and presenting the IAP2 spectrum.
- ❖ **Introduction to Public Participation and Outreach in the Energy Sector**  
Presented an overview of the major issues and challenges facing the energy sector today and discussed how public participation and outreach can help to meet them.
- ❖ **Introduction to Best Practices in Public Participation**  
Discussed the ideal means by which an effective public participation program can be implemented.
- ❖ **The Access Initiative Toolkit**  
Discussed the applicability of the World Resources Institute's toolkit for benchmarking best practices and promoting accountability in the electricity sector.

### **Technical Advisory Group (IIE)**

A Training Needs Assessment of the South Asia Regional Initiative for Energy (SARI/E) during its first phase of implementation was conducted in order to determine the priorities and direction of SARI/E for the second phase. The report, training recommendations and summary of meetings are as follows:

❖ **From the SARI/E Training Needs Assessment:**

- ❖ Final Report on SARI/E Training Needs Assessment
- ❖ List of Stakeholder Meetings
- ❖ Training Institution Partner Meeting Summaries
- ❖ Country Summary Reports
- ❖ Common Regional Topics Issues
- ❖ Descriptions of Recommended SARI/E Activities

- ❖ Description of Executive Leadership Development for the South Asia MBA Program
- ❖ **Report on Training Session for Building Developing Country Capacity for Negotiating and Equitable and Effective Climate Regime**  
Report from the joint USAID/Wallace Global Foundation-funded, three-day workshop to help Latin American and Caribbean climate change experts develop skills in negotiation of the Climate Change Convention.
- ❖ **Follow-up Survey on USAID Eurasia Climate Change Training Program 2000-2001**  
An extensive survey working with in-country implementing partners to determine what alumni had been able to accomplish following their participation in the series of climate change training courses in Eastern Europe (Romania, Bulgaria, Macedonia) and Central Asia. Up to 80% of participants responded and provided detailed information on their contributions to projects, negotiations, policy development, climate change offices and websites.
- ❖ **Training Needs Assessments**  
The final Training Needs Assessments reports and training recommendations conducted under the Technical Advisory Group program are listed below.
  - ❖ Report on Training Needs Assessment for Training of the Bangladesh Power Development Board
  - ❖ Report on El-Kureimat Training Needs Assessment
  - ❖ Executive Summary of Power Sector Reform: Training Needs and Proposed Program to Meet Those Needs (India)
  - ❖ Report on Participation and Capacity Building for Energy Sector Reforms: A Review of Regional Options in Indonesia

### **Technical Advisory Group (CORE)**

- ❖ **Disaster Preparedness and Planning Checklist Document for Reconstruction**  
The “Checklist Document” was designed for U.S. Government missions for disaster relief planning in countries stricken with major natural disasters. Originally prepared with the Hurricane Mitch disaster in mind, it has now been revised to serve as a broader disaster management guideline document for USAID Missions worldwide.
- ❖ **Capacity Building for Small Island Developing States (SIDs) in Climate Change Project Development and Prioritization**  
Report detailing the solid waste management problem found in many SIDs. Includes a summary of the creation of the training manual, “Guide for SIDs in Preparation of Solid Waste Management Projects Incorporating Climate Change Benefits and Private Sector Participation.

❖ **Summary Paper on the Status of Indonesia Oil and Gas Sector Policy and Reform**

This TAG mission focused on a review of Indonesia's oil and gas sector policy and on providing specific inputs to the Indonesian oil and gas law.

**Technical Leadership Training Program (IIE)**

**Best Practices Guides:** These Best Practices Guides were produced for each training course in the Technical Leadership Training program and were designed to be used by those participants that could not attend the training and as a summary and materials source for all.

- ❖ Application of ISO 14000 Environmental Management Systems for Municipalities
- ❖ Global Climate Change and Development
- ❖ Macroeconomic Modeling for Climate Change Planning
- ❖ Market Approaches to Environmental Protection
- ❖ Monitoring, Evaluating, Reporting, Verification, and Certification of Climate Change Mitigation Projects
- ❖ Economic and Financial Evaluation of Energy Efficiency Projects and Programs
- ❖ Economic and Financial Evaluation of Renewable Energy Projects
- ❖ Energy Efficiency Entrepreneurship
- ❖ Implementing Power Sector Reform
- ❖ Integrated Resource Planning for Electricity
- ❖ Renewable Energy Entrepreneurship

**Regional Task Orders**

**Asia and Near East**

**South Asia Regional Initiative for Energy – Training (AED)**

❖ **Report on Stakeholder Research on Power (and Appendices)**

Result of in-depth research with almost 500 power sector stakeholders in India, Bangladesh, Nepal and Sri Lanka, including over 100 high level decision-makers from opinion leaders, such as utilities, regulators, government, media, academia, and consumer groups, and over 450 consumers, from rural domestic to larger industrial consumers. This report provides insights on (1) stakeholder views of the most important power issues at a local, national, and regional level; (2) consumers' "willingness to pay" for power; (3) regional energy cooperation awareness and knowledge; and (4) key power sector communication themes and credible sources of information.

❖ **Website for Distance Learning Courses**

[www.sari-energy.org](http://www.sari-energy.org) This website provides an overview of the SARI/E Training Program and contains four distance learning courses on the following subjects: (1) Environmental Impact Assessments for Power Plants; (2) Independent Regulation: Theory and Practice; (3) Contracts Design for Energy Trade; and (4) Developing and Financing Energy Efficiency Projects. To access these courses, go to [www.sari-energy.org](http://www.sari-energy.org), place your mouse over “Activities” on the side bar, and then click on Training. Go to the bar near the top of the page, click on e-Learning, and then click on SARI-Energy e-Courses in the middle of the page.

**South Asia Regional Initiative for Energy – Rural Energy Services (CORE)**

❖ **Workshop Materials for Regulating Rural Electric Utilities (REUs) and Off-Grid Utility Systems**

Focused on regulatory models for both grid-based extensions as well as institutional structures for REUs and off-grid energy providers.

❖ **Workshop Materials for Creating the Environment for the REUs – Models for RE in South Asia**

Focused on specific policy, institutional, and financial actions needed in order to accelerate the entry of REUs and private off-grid energy suppliers into the Asian rural energy markets.

❖ **Conference Materials from the Private Participation in Rural Energy Service Delivery Regional Conference**

Materials from this conference focused on financing of rural energy programs and projects and included the following:

❖ **Innovative Approaches for Financing Rural Energy Services**

Presentation provided views on innovative approaches for financing rural energy services (RES) and focused on overall policy, institutional, and management approaches that should be followed in creating the necessary market environment for large-scale RES development in the South Asia region and beyond.

❖ **Role of Subsidy in Rural Energy Service Initiatives**

Presentation discussed establishing an effective and transparent system of Rural Electrification subsidies, creating performance indicators to monitor these programs, and regulating and adjusting subsidies.

❖ **Opportunities for Women in Renewable Energy Technology**

This presentation focused on gender aspects of Renewable Energy Technology as a means of improving the quality of life of women and their empowerment through its use. Illustrated by a Case Study on private sector led initiatives in providing rural energy services in Bangladesh, the presentation covered issues such as (i) women as users

of modern energy, (ii) role of modern energy in improving the households' quality of life, (iii) income generation activities for women in energy service delivery, and (iv) impact of energy services on women participating in the project.

❖ **Role of Income Generation in Creating Market Access for Rural Energy Supply Initiatives**

Presentation discussed and outlined requirements for creating a market for rural energy supply by increasing income of rural population, with primary focus on South Asia, where more than half a billion people live in poverty.

❖ **Importance of Multilateral / Bilateral Funding in Providing Initial Impetus to Private Rural Energy Service Delivery Mechanisms**

Presentation discussed the role of donors in rural energy services delivery, the need for initial concession capital, and improved coordination of financing lines. Presented case studies from the World Bank involvement in rural energy services delivery in Sri Lanka, including village hyrdo projects and solar home systems.

## **Europe and Eurasia**

### **Eurasia Climate Change Training Program (IIE)**

❖ **Executive Summary of Global Climate Change and Development Workshop**

Summary of Climate Change and Development seminar for high level officials covering policy and technology issues related to decision-making on climate change activities for economies in transition.

❖ **Executive Summary of Regional Climate Change Training for Eastern Europe Workshop**

Summary of one week workshop for officials of local governments and related stakeholders making decisions related to investment in climate change activities, regarding the role of local governments in reducing greenhouse gas emissions, and the opportunities for win-win solutions that support local government agendas such as improved energy efficiency, reduced pollution, increased public servivces etc.

❖ **Best Practices Guide on Economic of Climate Change: Project Implementation**

Summary of workshop materials for one week workshop on economics, policies, technologies and mechanisms for international cooperation in reducing greenhouse gas emissions. Workshop was focused on project development information such as financial and economic analysis, project assessments, and project implementation for participants in Central Asia.

❖ **Executive Summary of Macroeconomic Modeling for Climate Planning in Kazakhstan Workshop**

Summary of technical issues involved with economic and policy modelling to support climate change planning activities of governments. Includes a summary of discussions with participants on key issues for the Central Asia region.

❖ **Executive Summary of Macroeconomic Modeling for Climate Planning in Romania Workshop**

Summary of technical issues involved with economic and policy modelling to support climate change planning activities of governments. Includes a summary of discussions with participants on key issues for Romania, Macedonia and Bulgaria.

## Country Task Orders

### Albania

#### **USAID Support for Commercialization, Training and Utility Advisor for Albania (CORE)**

❖ **Workshop Materials for Human Resources Management Training Course**

Focused on overall Human Resources (HR) management issues, organizational structure, HR management procedures and objectives, personnel development and other issues related to the process of unbundling the Albania national utility.

❖ **Materials from Roundtable Discussion: The Role of KESH in the Policy Statement and the National Energy Strategy Development**

The Roundtable facilitated discussions among the national utility of Albania (KESH) management, the National Agency for Energy experts and Ministry of Industry and Energy representatives on steps to be taken by KESH to be fully responsive to the National Energy Strategy development process.

❖ **Materials from Roundtable Discussion: Power Sector Policy Statement Implementation Process**

Attended by over 20 Albanian power sector key stakeholder representatives, the Roundtable included presentations on Power Sector Policy Statement (PSPS) milestones and action plans prepared to support the PSPS implementation.

❖ **Workshop - Albania Power Sector Reform**

This workshop focused on overall power sector policy and reform issues and experiences, coordination mechanisms, regulatory framework, strategic management process, and energy sector project and program financing.

❖ **Materials from Roundtable Discussion: Proposed Reform Steps to be Implemented in the Aftermath of Athens MOU**

This roundtable focused on discussion related to the requirements of the Athens Memorandum signed by the Government of Albania as part of its commitment to the regional electricity market and association with the European Union.

## **Bangladesh**

### **Bangladesh Energy Training Program (IIE)**

❖ **Economic Rationality for Tariff Design**

Part of materials handed out at the Power Sector Unbundling & Corporatization workshop. Tariff design is an important activity for both an integrated or unbundled company.

❖ **Example of a Commercial Transaction Power Purchase Contract (PPC)**

Part of materials handed out at the Power Sector Unbundling & Corporatization workshop. This was an example of an actual power purchase contract between a utility and an IPP.

❖ **Example of a Power Request for Proposal (RFP)**

Part of materials handed out at the Power Sector Unbundling & Corporatization workshop. This was a sample request for proposals by an integrated utility for purchase of power.

❖ **Exploration Geophysics Manual**

Manual for a two-week workshop on Exploration Geophysics and Basin Modeling.

❖ **Future of Natural Gas: World Supply and Demand**

Presentation by Dr Ali Pelehavari, Chairman Dept of Natural Gas and Chemical Engineering, Texas A&M., during a workshop on Modern Trends in Engineering Design and O&M of Gas Processing Systems.

❖ **Gas Supply Agreements in the Independent Power Project Context**

Course manual prepared by Dr Tom West of Hutton and Williams for a workshop on Gas Supply and Gas Supply Agreements in Context of IPPs

❖ **Negotiating and Management of Production-Sharing Contracts**

Presentation materials by one of the instructor, Mr Dennis Stickley, for a workshop on Negotiating & Management of Production Sharing Contracts.

❖ **BETP Transmission Power System Planning, Protection, and Operation**

Part of manual covering power system modeling fundamentals for the two-week workshop on Transmission Power System Planning, Protection & Operation.

- ❖ **Process Measurement and Instrumentation**  
Part of presentation materials for a one week workshop on Fundamentals of Instrumentation, Controls and Electrical Installations for Gas Transmission Pipeline Facilities.
- ❖ **Negotiating and Managing Production Sharing Contracts**  
Presentation materials by second of two instructor, Mr Mohsin Sherazi, for the workshop on Negotiating & Management of Production Sharing Contracts.
- ❖ **Regulatory Framework and Tariff Setting for Distribution of Electric Power - Analysis of International Experience**  
Part of a manual for a workshop on International Perspectives on Privatization of Power Distribution Assets.
- ❖ **Asset Management Through the Reservoir Life Cycle**  
Part of presentation materials for a two week workshop and executive and outreach seminars on the topic of Reservoir Evaluation, Development and Production.
- ❖ **International Petroleum Industry Upstream Procurement Practices**  
Part of presentation materials for a workshop on International Practices in Petroleum Industry Upstream Procurements.

## **Brazil**

### **Brazil Energy Training and Outreach Program (BETOP) (IIE)**

- ❖ **Success Stories**  
These success stories tell of the major results that accrued from the BETOP training. Some affected only a region and some affected the entire country.
  - ❖ The 1% Mandate and Energy Efficiency Evaluation Training
  - ❖ Energy Services Company Training
  - ❖ Renewable Energy and Energy Efficiency Promotion by Banco Do Nordeste
- ❖ **Overview of BETOP**  
Presentation describing the BETOP.
- ❖ **Presentation on Results of BETOP**  
Presentation summarizing the activities and results of the BETOP.
- ❖ **Completion Summary of BETOP**  
Describes the activities and results achieved.



## Egypt

### Egypt Electricity Regulatory Project (AED)

- ❖ **Seminar Materials from the Executive Forum**

Selected materials from the Executive Forum, which was attended by regulators from numerous emerging economy countries and presented an executive-level review of the major issues confronting regulators in markets undergoing power sector restructuring. The materials consist of:

- ❖ **Creating a Competitive Energy Market in Egypt**

Presented a history of energy market development in Egypt and an analysis of major current and future issues to be addressed.

- ❖ **Key Issues in Creating Competitive Regional Energy Markets**

Discusses the benefits of cross-border electricity trade, analyzes issues associated with contract formation pursuant to regional trade, and presented a brief summary of the functions of an organization that would monitor a regional electric market.

### El-Kureimat Power Plant Training Analysis and Training Project (IIE)

- ❖ **Project Summary**

Short summary of the entire El-Kureimat project.

- ❖ **System Operating Procedure Manual – Condensate System**

Excerpt from the El-Kureimat Training manual that describes the plant condensate system.

- ❖ **System Operating Procedure Manual – Integrated Unit Operations**

Excerpt from the El-Kureimat Training manual that describes the integrated unit operations.

## Indonesia

### Indonesia Electricity Sector Restructuring (IIE)

- ❖ **International Survey of Low-Income and Rural Development Programs for the Electricity Sector: For the Development of the Indonesian Social Electricity Fund**

Examined the options for providing electric utility subsidies to low-income consumers and rural energy consumers in the context of a larger restructuring of the Indonesia electric industry.

- ❖ **Training Needs Analysis for Restructuring the Indonesian Electricity Sector**

Identified a specific set of changes, the step-by-step restructuring of the national electricity system into a competitive system. Most of the training needs were dictated by the structure and function of new organizations that do not currently exist in Indonesia.

## **Indonesia Energy and Environment Training Program (IIE)**

- ❖ **Manual on Environmental Management of Thermal Power Plants**  
Sample course manual that included table of contents and slide presentations.

## **Philippines**

### **Philippines Energy Environment Training Program (AED)**

- ❖ **Fiscal Autonomy Review: Comparative Study of Regulatory Fiscal Autonomy Around the World**  
An analysis of essential elements of the relationship between fiscal autonomy and the decision-making and planning independence of an energy regulatory authority. Different means of funding and their relationship upon effective regulation were examined.
- ❖ **Introductory Primer to Market Monitoring and Surveillance of Wholesale Electric Markets**  
A basic introduction and analysis of the different methods and means by which wholesale electric power markets are monitored by energy regulators. Examples from different markets around the world were provided.

## **Ukraine**

### **Ukraine Energy MBA Program II – V (IIE)**

- ❖ **Ukraine Utility Planning Manual**  
The manual served as an introduction to the overall process of utility investment planning, including: planning constraints, relationship amongst technical financial and strategic planning concepts of short, medium and long term plans.
- ❖ **Economic and Financial Evaluation**  
The presentation "The Economic and Financial Evaluation of Energy Investment Projects", introduced the MBA students into the methods and application of Economic and Financial instruments to evaluate energy investment decisions. It considered the historical context, regulation framework, estimates of profitability, financial opportunities and risk mitigation among other critical factors.



# **ENERGY & ENVIRONMENTAL TRAINING PROGRAM**

## **TASK ORDER ACTIVITY SHEETS**

